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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/829,256	04/09/2001	Jeffrey Dinkel	DINK I	7582
6980	7590	09/07/2006	EXAMINER A, PHI DIEU TRAN	
TROUTMAN SANDERS LLP 600 PEACHTREE STREET , NE ATLANTA, GA 30308			ART UNIT 3637	PAPER NUMBER

DATE MAILED: 09/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/829,256

Applicant(s)

DINKEL, JEFFREY

Examiner

Phi D. A

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13,45,46 and 49-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13,45,46 and 49-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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**PRODUCT BY PROCESS CLAIM:**

“ The subject matter present is regarded as a product by process claim in which a product is introduced by the method in which it is made. It is the general practice of this office to examine the final product described regardless of the method provided by the applicant.”

***The above office policy applies to the limitation “ non-liquid applied”.***

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 8-9, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mathieu (01/0000738) in view of Fahmy (6171680) and Dinkel(3284980).

Mathieu (figure 9) discloses a prefabricated asymmetrical construction element/panel (the layers 3 and the layer on top of the core are not symmetrical around the core) having a cementitious core (10, col 7 line 7) having an upper principal face and a lower principal face, alkaline resistance fiber to be used with a Portland cement, having additive of expanded shale (col 10 line 3 third paragraph), a cementitious bonding surface (per the slurry layer 4 on top of the core 10) remaining on the upper principal face of the construction element after the manufacture of the construction element, pervious upper reinforcement material(mesh 12) on the upper principal surface of the core, a cement slurry binding the reinforcement layer on the upper face of the core, an upper coating/cement slurry(4) in communication with the upper principal face of the core and the pervious upper reinforcement material, the layer comprising a fiberglass mesh with an alkaline resistant coating selected from the group consisting of woven fiberglass

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and fiberglass skim, the construction element being asymmetrical in design such that a layer or layers on the upper principal surface differ in arrangement from the layer or layers on the lower principal surface (figure 9 shows the asymmetry per the arrangement of membrane layer 4).

Mathieu does not show the core having alkaline resistance fiber, there is only one non-cementitious reinforcement impervious membrane for the construction element, that being located on the lower principal face of the core, a non-cementitious surface remaining on the lower principal face of the construction after the manufacture of the construction elements, and an non-cementitious reinforcement impervious membrane remaining on the lower principle surface of the core after the manufacture of the element, and the membrane being high tensile strength, the membrane being a polymer membrane, the membrane being a single polymer membrane layer.

Fahmy (col 2 lines 53-58) discloses an impervious non-cementitious reinforcement polymer membrane (22) remaining on the lower principle surface of the core (20) after the manufacture of the element to act as a water vapor barrier, the membrane (22) being a single polymer membrane layer, only one impervious membrane located on the lower principle surface of the core(20).

Dinkel discloses fiber in the core to reinforce the core.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Mathieu to show the core having alkaline resistance fiber, there is only one non-cementitious reinforcement impervious membrane for the construction element, that being located on the lower principal face of the core, a non-cementitious surface remaining on the lower principal face of the construction after the manufacture of the construction elements, and

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an non-cementitious reinforcement impervious membrane remaining on the lower principle surface of the core after the manufacture of the element, and the membrane being high tensile strength, the membrane being a polymer membrane, the membrane being a single polymer membrane layer because fiber would reinforce and strengthen the core as taught by Dinkel, and having an non-cementitious impervious membrane on the lower principle surface of the core after the manufacture of the element, the membrane being only a single polymer membrane layer on the lower principle surface would provide a water barrier to the construction element while allowing water vapor to escape as taught by Fahmy.

Mathieu as modified shows the prefabricated asymmetrical construction element having a non-cementitious surface remaining on the lower principal face of the construction element after the manufacture of the construction element, an impervious non-cementitious reinforcement membrane on the lower principal face of the core, the membrane remaining on the lower face of the core after the manufacture of the construction element.

2. Claims 2, 3, 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mathieu (0000738) in view of Fahmy (6171680) and Dinkel(3284980).

Mathieu as modified shows all the claimed limitations except for the fiber being chopped reinforcement fibers randomly dispersed in the core.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Mathieu's modified structure to show the fiber being chopped reinforcement fibers randomly dispersed in the core because using chopped fibers randomly distributed on a core to reinforce a core is well-known in the art as it provides high strength to the core while maintaining low distribution cost.

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3. Claims 4, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mathieu (0000738) in view of Fahmy (6171680), Dinkel(3284980) as applied to claim 2 or 8 above and further in view of Nicoll Jr. (3887952).

Mathieu as modified shows all the claimed limitations except for the membrane having water impervious paperboard.

Fahmy further discloses the membrane being conventionally known “breathable” resins made from polyesters, polyurethanes, acrylic polymers, polyethers, ester-ether copolymers, and the like as well as blends and copolymer thereof.

Nicoll Jr. shows a water impervious membrane being paperboard.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Mathieu’s modified structure to show the membrane being water impervious paperboard as taught by Nicoll Jr. because waterproof paperboard allows for the easy and cheap construction of a waterproof layer as taught by Nicoll Jr.

4. Claims 5, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mathieu (0000738) in view of Fahmy (6171680), Dinkel(3284980) as applied to claim 2 or 8 above and further in view of Flack et al (4828635).

Mathieu as modified shows all the claimed limitations except for the membrane comprising spunbonded olefin.

Flack et al discloses a membrane made of spunbonded olefin.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Mathieu’s modified structure to show the membrane comprising

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spunbonded olefin because it allows for the construction of a water vapor permeable layer and energy cost saving as taught by Flack et al.

5. Claims 6, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mathieu (0000738) in view of Fahmy (6171680), Dinkel(3284980) as applied to claim 2 or 8 above and further in view of Galer (4450022).

Mathieu as modified shows all the claimed limitations except for the non-cementitious membrane comprising an alkaline resistant dense polymer fiber mat.

Galer shows a membrane an alkaline resistant dense polymer fiber mat.

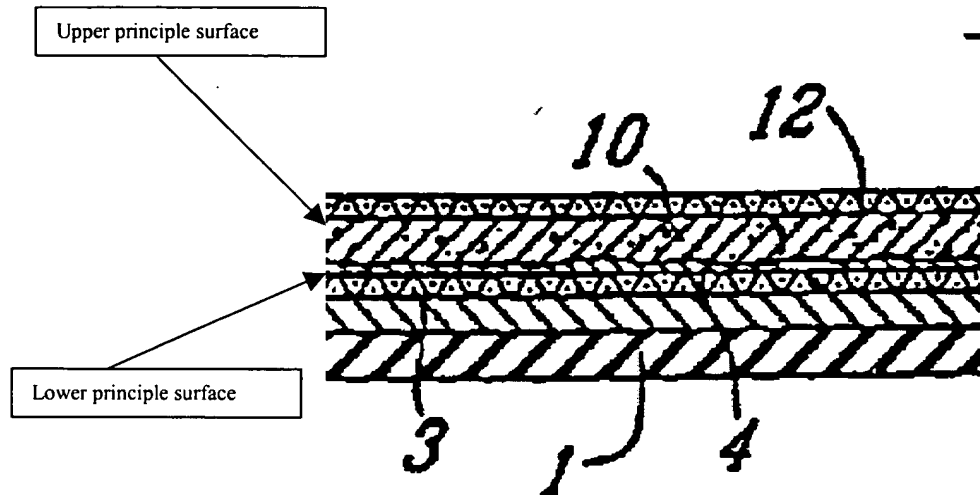
It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Mathieu's modified structure to show a non-cementitious membrane comprising an alkaline resistant dense polymer fiber mat because it enables the formation of a reinforced protective layer as taught by Galer.

6. Claims 45-46, 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mathieu (0000738) in view of Fahmy.

Mathieu (figure 9) discloses a prefabricated asymmetrical construction element (see below) having a cement core (10, page 10 col 1 line 2 ) having an upper principal face and a lower principal face, a pervious cementitious bonding surface (formed by the slurry 4 when dry) remaining on the upper principal face of the core after the manufacture of the construction element, a cement slurry binding the reinforcing layer to the upper principal face of the core, the structural construction element being asymmetrical in design such that after manufacture, the upper principal surface including a pervious cementitious bonding surface and the lower principal surface including an impervious non-cementitious reinforcing membrane, the

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construction element being a prefabricated structural element capable of supporting loads (not known yet) associated with elements used as an underlayment or backerboard, the different moisture resistant layers having different moisture resistant properties, the core including alkaline resistance fibers.



Mathieu does not show a single non-cementitious reinforcement impervious membrane layer remaining on the lower principle face of the core after the manufacture of the element, and the membrane being high tensile strength, the membrane barrier enabling water vapor to pass therethrough, the impervious reinforcement membrane having a non-cementitious lower surface, a non-cementitious surface remaining on the lower principal face of the structural construction element after the manufacture of the structural construction element, the upper principal surface and the lower principal face of the core having different moisture resistant layer respectively on each.

Fahmy (col 2 lines 53-58) discloses a single impervious polymer membrane layer (22) remaining on the lower principle surface of the core (20) after the manufacture of the element to



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act as a water barrier, the membrane being high tensile strength, the membrane enabling water vapor to pass therethrough.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Mathieu to show a single non-cementitious reinforcement impervious membrane layer remaining on the lower principle face of the core after the manufacture of the element, and the membrane being high tensile strength, the membrane barrier enabling water vapor to pass therethrough, the impervious reinforcement membrane having a non-cementitious lower surface, a non-cementitious surface remaining on the lower principal face of the structural construction element after the manufacture of the structural construction element, the upper principal surface and the lower principal face of the core having different moisture resistant layer respectively on each because having a single impervious membrane layer on the lower principle surface of the core after the manufacture of the element would provide a water barrier to the construction element while allowing water vapor to escape as taught by Fahmy.

Mathieu as modified shows only one impervious membrane for the construction element that being located on the lower principal surface of the core, a non-cementitious surface remaining on the lower principal face of the structural construction element after the manufacture of the structural construction element, the upper principal surface and the lower principal face of the core having different moisture resistant layer respectively on each (per the different properties of the membrane and the top cementitious layer).

7. Claims 50-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mathieu (0000738) in view of Fahmy (6171680) and Dinkel(3284980).

Mathieu as modified shows all the claimed limitations except for the fiber being chopped reinforcement fibers randomly dispersed in the core.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Mathieu's modified structure to show the fiber being chopped reinforcement fibers randomly dispersed in the core because using chopped fibers randomly distributed on a core to reinforce a core is well-known in the art as it provides high strength to the core while maintaining low distribution cost.

#### ***Response to Arguments***

8. Applicant's arguments filed 6/14/06 have been fully considered but they are not persuasive.

Applicant states that neither Mathieu, Dinkel nor Fahmy shows an asymmetrical construction element, examiner respectfully disagrees. As set forth in figure 9 and the rejection above, the panel/construction element core has one layer on the top surface of the core and two layers on the lower surface of the core. The panel is thus asymmetrical. If applicant means to state that the element is asymmetrical due to the properties of the top and bottom layers, applicant is respectfully requested to put the limitation in the claims. For clarification, the asymmetry due to property of layers is later claimed in claim 46, and treated accordingly. Furthermore, Mathieu as modified by Fahmy shows a core having a top slurry layer and an impervious layer on the lower surface of the core. The modification further shows the limitations as claimed. The argument is thus moot.

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With respect to applicant's statement to the pervious upper bonding surface, Mathieu shows a pervious upper bonding surface on the upper face of the construction element as claimed. The argument is thus moot.

With respect to the core being a cementitious core, Mathieu discloses a cementitious core in col 7 line 7 (right hand side) and column 10 paragraph 193. Mathieu thus shows the upper principal face of the cementitious core being a cementitious bonding surface after the element has been manufactured. The argument is thus moot.

With respect to the limitation of a non-cementitious surface remains on the lower face of the element after manufacturing the element, as pointed out above, the combination of the teachings of Mathieu and Fahmy shows a non-cementitious surface remains on the lower face of the element after manufacturing the element. Specifically, Fahmy teaches a non-cementitious surface on the bottom surface of a construction element. The argument is thus moot.

With respect to applicant's argument to asymmetry of the construction element on page 8, examiner respectfully points out that Mathieu as modified by Fahmy shows the limitation as claimed. Mathieu as modified shows the bottom layer of the panel/construction element being an non-cementitious membrane/layer and the property of which is different from the layer on top of the core. The argument is thus moot.

With respect to applicant's argument to Fahmy, examiner respectfully points out that Fahmy is a secondary reference, which teaches a non-cementitious layer on the lower surface of the core 20. Combining Mathieu with Fahmy thus shows the asymmetry and property as claimed. Fahmy further shows only one non-cementitious layer (22) on the bottom of the core as

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set forth above. Also, the combination is encouraged as set forth in the rejection above. the argument is thus moot.

With respect to applicant's argument that Fahmy's part 20 is not the core, examiner respectfully disagrees. Fahmy shows the core 20 being sandwiched among a plurality of layers. The layer 20 thus is a core layer. The combination of Mathieu and Fahmy thus shows the limitations as claimed. The argument is thus moot.

Applicant's arguments to the references and their teachings are thus also moot

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

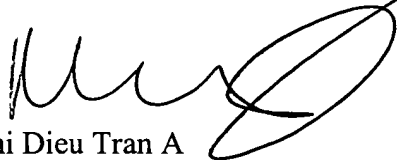
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phi D A whose telephone number is 571-272-6864. The examiner can normally be reached on Monday-Thursday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lanna Mai can be reached on 571-272-6867. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, consisting of a series of loops and a large circular flourish at the end.

Phi Dieu Tran A

9/3/06